Civil Engineering Database Subject Heading Index

The **Civil Engineering Database (CEDB)** is designed to provide free, easy bibliographic access to all ASCE publications. The database covers ASCE documents published since 1970. It provides access to all the journals, conference proceedings, books, standards, manuals, magazines, and newspapers. The index terms below were assigned to papers published in this journal during 2003 from a CEDB subject heading list. The CEDB and subject heading list can be accessed on the Web at *http://www.pubs.asce.org/cedbsrch.html*.

Agricultural engineering

Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Algorithms

Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).

Aquifers

Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. —Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).

Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).

Flow Depletion of Semipervious Streams Due to Pumping. — Sushil K. Singh; 129(6), 449-53 (2003).

Arid lands

History and Evaluation of Hargreaves Evapotranspiration Equation. —George H. Hargreaves and Richard G. Allen; 129(1), 53-63 (2003).

ASCE

Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).

Australia

Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).

Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Basins

Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).

Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Best management practices

Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. — M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Blocks

Development of Efficient Stilling Basins for Pipe Outlets. — D. V. S. Verma and Arun Goel; 129(3), 194-200 (2003).

Border irrigation

Evaluation of Various Surface Irrigation Numerical Simulation Models. — Fariborz Abbasi, Mohammad Mahmodian Shooshtari, and Jan Feyen; 129(3), 208-13 (2003).

Boussinesq equations

Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. —Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).

Calibration

Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. —Jean-Claude Mailhol; 129(6), 412-21 (2003).

California

History and Evaluation of Hargreaves Evapotranspiration Equation. —George H. Hargreaves and Richard G. Allen; 129(1), 53-63 (2003).

Canals

General Characteristics of Solutions to the Open-Channel Flow, Feedforward Control Problem. —E. Bautista, T. S. Strelkoff, and A. J. Clemmens; 129(2), 129-37 (2003).

Channels, waterways

Hydraulically Efficient Power-Law Channels. —Arif A. Anwar and Tonny T. de Vries; 129(1), 18-26 (2003).

Climatic data

Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).

Climatology

Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).

Computation

Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).

Application of Ergun Equation to Computation of Critical Shear Velocity Subject to Seepage. — Nian-Sheng Cheng; 129(4), 278-83 (2003).

Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).

Computer aided simulation

Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. — G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).

Conductivity

Soil Water Retention and Conductivity When Vapor Flow Is Important. — Lyle Prunty; 129(3), 201-7 (2003).

Costs

Inlet Pressure, Energy Cost, and Economic Design of Tapered Irrigation Submains. — John D. Valiantzas; 129(2), 100-7 (2003).

Crops

Modeling Reservoir Irrigation in Uncertain Hydrologic Environment. —P. G. Jairaj and S. Vedula; 129(3), 164-72 (2003).

Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).

Cross sections

Hydraulically Efficient Power-Law Channels. —Arif A. Anwar and Tonny T. de Vries; 129(1), 18-26 (2003).

Data analysis

Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).

Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Decision support systems

Regional Water Management Modeling for Decision Support in Irrigated Agriculture. —Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Depth

Quasi-Theoretical End-Depth-Discharge Relationship for Rectangular Channels. —Z. Ahmad; 129(2), 138-41 (2003).

Design
Inlet Pressure, Energy Cost, and Economic Design of Tapered Irrigation Submains. — John D. Valiantzas; 129(2), 100-7 (2003).
Two-Dimensional Basin Flow with Irregular Bottom Configuration. — Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Discharge coefficients
Flow through Side Sluice Gate. — Masoud Ghodsian; 129(6), 458-63 (2003).
Dispersion
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. — Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Drainage
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. — M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).
Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. —Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. —T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).
Embankments
Pond Water Source for Irrigation on Steep Slopes. —Yeboah Gyasi-Agyei; 129(3), 184-93 (2003).
Energy consumption
Water Delivery System Planning Considering Irrigation Simultaneity. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Energy losses
Direct Equations for Hydraulic Jump Elements in Rectangular Horizontal Channel. —Shri Ram Chaurasia; 129(4), 291-4 (2003).
Equation of motion
Application of Ergun Equation to Computation of Critical Shear Velocity Subject to Seepage. —Nian-Sheng Cheng; 129(4), 278-83 (2003).
Estimation
Effect of Lateral Water Surface Profile on Side Weir Discharge. —Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).
Evapotranspiration
History and Evaluation of Hargreaves Evapotranspiration Equation. —George H. Hargreaves and Richard G. Allen; 129(1), 53-63 (2003).
Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).
Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).
Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. — S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).
Effect of Lateral Water Surface Profile on Side Weir Discharge. — Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).
Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).
Forecasting of Reference Evapotranspiration by Artificial Neural Networks. — Slavisa Trajkovic, Branimir Todorovic, and Miomir Stankovic; 129(6), 454-7 (2003).
Farms
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. — B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).
Fertilization
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. — Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Fertilizers
Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).
Florida
Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. —S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).
Effect of Lateral Water Surface Profile on Side Weir Discharge. —Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).
Flow control
General Characteristics of Solutions to the Open-Channel Flow, Feedforward Control Problem. —E. Bautista, T. S. Strelkoff, and A. J. Clemmens; 129(2), 129-37 (2003).
Flow measurement
Quasi-Theoretical End-Depth-Discharge Relationship for Rectangular Channels. —Z. Ahmad; 129(2), 138-41 (2003).
Forecasting
Demand Forecasting for Irrigation Water Distribution Systems. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).
Forecasting of Reference Evapotranspiration by Artificial Neural Networks. —Slavisa Trajkovic, Branimir Todorovic, and Miomir Stankovic; 129(6), 454-7 (2003).
Free flow
Flow through Side Sluice Gate. —Masoud Ghodsian; 129(6), 458-63 (2003).
Froude number
Direct Equations for Hydraulic Jump Elements in Rectangular Horizontal Channel. —Shri Ram Chaurasia; 129(4), 291-4 (2003).
Furrow irrigation
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Evaluation of Various Surface Irrigation Numerical Simulation Models. — Fariborz Abbasi, Mohammad Mahmodian Shooshtari, and Jan Feyen; 129(3), 208-13 (2003).
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).
Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. — Jean-Claude Mailhol; 129(6), 412-21 (2003).
Gates
Flow through Side Sluice Gate. — Masoud Ghodsian; 129(6), 458-63 (2003).
Geographic information systems
Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. — Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).
Graphic methods
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).
Grasses
Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. —S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).
Effect of Lateral Water Surface Profile on Side Weir Discharge. —Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).
Ground water
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. —M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. —Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).
Ground-water management
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).
Head loss
Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. —G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).
Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).
History
History and Evaluation of Hargreaves Evapotranspiration Equation. —George H. Hargreaves and Richard G. Allen; 129(1), 53-63 (2003).
Humid areas
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).
Humidity
Effect of Lateral Water Surface Profile on Side Weir Discharge. —Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).

Hydraulic design
Explicit Hydraulic Design of Microirrigation Submain Units with Tapered Manifold and Laterals. — John D. Valiantzas; 129(4), 227-36 (2003).

Hydraulic jump
Direct Equations for Hydraulic Jump Elements in Rectangular Horizontal Channel. — Shri Ram Chaurasia; 129(4), 291-4 (2003).

Hydraulic models
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. — Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. — Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Hydraulic performance
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. —Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

Hydrographs
True Form of Instantaneous Unit Hydrograph of Linear Reservoirs. —Raymond I. Jeng and Giles C. Coon; 129(1), 11-7 (2003).

Hydrologic models
Modeling Reservoir Irrigation in Uncertain Hydrologic Environment. —P. G. Jairaj and S. Vedula; 129(3), 164-72 (2003).

Imaging techniques
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. —Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

India
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. —B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).

Infiltration
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).
Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. —Jean-Claude Mailhol; 129(6), 412-21 (2003).

Inlets, waterways
Inlet Pressure, Energy Cost, and Economic Design of Tapered Irrigation Submains. —John D. Valiantzas; 129(2), 100-7 (2003).
Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).

Irrigation
Inlet Pressure, Energy Cost, and Economic Design of Tapered Irrigation Submains. —John D. Valiantzas; 129(2), 100-7 (2003).
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. —B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).
Optimal Design and Operation of Irrigation Pumping Stations. — Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).
Allocation of Scarce Water Resources Using Deficit Irrigation in Rotational Systems. — S. D. Gorantiwar and I. K. Smout; 129(3), 155-63 (2003).
Modeling Reservoir Irrigation in Uncertain Hydrologic Environment. — P. G. Jairaj and S. Vedula; 129(3), 164-72 (2003).
Pond Water Source for Irrigation on Steep Slopes. — Yeboah Gyasi-Agyei; 129(3), 184-93 (2003).
Explicit Hydraulic Design of Microirrigation Submain Units with Tapered Manifold and Laterals. — John D. Valiantzas; 129(4), 227-36 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. —Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. —Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Irrigation practices
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. —Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

Irrigation systems
Water Delivery System Planning Considering Irrigation Simultaneity. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Demand Forecasting for Irrigation Water Distribution Systems. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Kinematic wave theory
True Form of Instantaneous Unit Hydrograph of Linear Reservoirs. —Raymond I. Jeng and Giles C. Coon; 129(1), 11-7 (2003).

Lagrangian functions
Optimal Design and Operation of Irrigation Pumping Stations. —Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).

Laterals
Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. —V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).

Leaching
Comparative Study of Two Nitrogen Models. —Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Mapping
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. — Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Models
Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. — G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. — T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).

Neural networks
Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).
Demand Forecasting for Irrigation Water Distribution Systems. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).
Forecasting of Reference Evapotranspiration by Artificial Neural Networks. — Slavisa Trajkovic, Branimir Todorovic, and Miomir Stankovic; 129(6), 454-7 (2003).

Nitrates
Comparative Study of Two Nitrogen Models. —Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).
Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Nitrogen
Comparative Study of Two Nitrogen Models. —Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Numerical models
Evaluation of Various Surface Irrigation Numerical Simulation Models. —Fariborz Abbasi, Mohammad Mahmodian Shooshtari, and Jan Feyen; 129(3), 208-13 (2003).

Open channel flow
General Characteristics of Solutions to the Open-Channel Flow, Feedforward Control Problem. —E. Bautista, T. S. Strelkoff, and A. J. Clemmens; 129(2), 129-37 (2003).

Open channels
Quasi-Theoretical End-Depth-Discharge Relationship for Rectangular Channels. —Z. Ahmad; 129(2), 138-41 (2003).
Direct Equations for Hydraulic Jump Elements in Rectangular Horizontal Channel. —Shri Ram Chaurasia; 129(4), 291-4 (2003).

Optimization
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. —B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).
Optimal Design and Operation of Irrigation Pumping Stations. —Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).

Overland flow
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. — Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).

Pakistan
Hydraulically Efficient Power-Law Channels. — Arif A. Anwar and Tonny T. de Vries; 129(1), 18-26 (2003).

Parameters
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).

Performance evaluation
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. — Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

Pipes
Development of Efficient Stilling Basins for Pipe Outlets. — D. V. S. Verma and Arun Goel; 129(3), 194-200 (2003).

Predictions
Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).
Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. —Jean-Claude Mailhol; 129(6), 412-21 (2003).

Probability density functions
True Form of Instantaneous Unit Hydrograph of Linear Reservoirs. —Raymond I. Jeng and Giles C. Coon; 129(1), 11-7 (2003).

Pumping stations
Optimal Design and Operation of Irrigation Pumping Stations. —Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).
Water Delivery System Planning Considering Irrigation Simultaneity. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).

Pumping tests
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).

Pumps
Water Delivery System Planning Considering Irrigation Simultaneity. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Flow Depletion of Semipervious Streams Due to Pumping. — Sushil K. Singh; 129(6), 449-53 (2003).

Radiation
Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).

Railroad tracks
Pond Water Source for Irrigation on Steep Slopes. — Yeboah Gyasi-Agyei; 129(3), 184-93 (2003).

Remote sensing
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. — Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Reservoirs
Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. — Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).
True Form of Instantaneous Unit Hydrograph of Linear Reservoirs. —Raymond I. Jeng and Giles C. Coon; 129(1), 11-7 (2003).
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. —B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).
Modeling Reservoir Irrigation in Uncertain Hydrologic Environment. —P. G. Jairaj and S. Vedula; 129(3), 164-72 (2003).

Retention
Soil Water Retention and Conductivity When Vapor Flow Is Important. —Lyle Prunty; 129(3), 201-7 (2003).

Riparian waters
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. —M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Rotation
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. —H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).

Salinity
Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. —Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Sediment
Application of Ergun Equation to Computation of Critical Shear Velocity Subject to Seepage. —Nian-Sheng Cheng; 129(4), 278-83 (2003).

Seepage
Application of Ergun Equation to Computation of Critical Shear Velocity Subject to Seepage. —Nian-Sheng Cheng; 129(4), 278-83 (2003).

Shallow water
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Simulation
Comparative Study of Two Nitrogen Models. — Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).
Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. — Jean-Claude Mailhol; 129(6), 412-21 (2003).

Simulation models
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Slopes
Pond Water Source for Irrigation on Steep Slopes. — Yeboah Gyasi-Agyei; 129(3), 184-93 (2003).
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. —T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).

Soil water
Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).
Allocation of Scarce Water Resources Using Deficit Irrigation in Rotational Systems. —S. D. Gorantiwar and I. K. Smout; 129(3), 155-63 (2003).
Soil Water Retention and Conductivity When Vapor Flow Is Important. —Lyle Prunty; 129(3), 201-7 (2003).
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. —Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).
Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. —Jean-Claude Mailhol; 129(6), 412-21 (2003).

Soils
Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).
Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Solar radiation
Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).

Solutes
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Spacing
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. — T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. — H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).

Spain
Water Delivery System Planning Considering Irrigation Simultaneity. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).

Sprinkler irrigation
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. — H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).

Sprinklers
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. —H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).
Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).

Standards
Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).

Stilling basins
Development of Efficient Stilling Basins for Pipe Outlets. — D. V. S. Verma and Arun Goel; 129(3), 194-200 (2003).

Streams
Flow Depletion of Semipervious Streams Due to Pumping. — Sushil K. Singh; 129(6), 449-53 (2003).

Stress
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. —Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Submerged flow
Flow through Side Sluice Gate. —Masoud Ghodsian; 129(6), 458-63 (2003).

Subsurface drainage
Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Surface irrigation
Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. — A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Temperature
Soil Water Retention and Conductivity When Vapor Flow Is Important. — Lyle Prunty; 129(3), 201-7 (2003).

Transport phenomena
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Trickle irrigation
Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. — V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).

Two-dimensional flow
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Uniformity
Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. —V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. —H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).

Unsteady flow
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Vapor
Soil Water Retention and Conductivity When Vapor Flow Is Important. —Lyle Prunty; 129(3), 201-7 (2003).

Velocity
Application of Ergun Equation to Computation of Critical Shear Velocity Subject to Seepage. —Nian-Sheng Cheng; 129(4), 278-83 (2003).

Water allocation policy
Allocation of Scarce Water Resources Using Deficit Irrigation in Rotational Systems. —S. D. Gorantiwar and I. K. Smout; 129(3), 155-63 (2003).

Water balance
Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. —Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).

Water demand
Demand Forecasting for Irrigation Water Distribution Systems. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Water depth
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Water discharge
Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. — G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).
Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. — V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).

Water distribution
Demand Forecasting for Irrigation Water Distribution Systems. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Water levels
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Water management
Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. —Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. —Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Water pipelines
Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).

Water pipes
Explicit Hydraulic Design of Microirrigation Submain Units with Tapered Manifold and Laterals. —John D. Valiantzas; 129(4), 227-36 (2003).

Water quality
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. —M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Water resources
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. —Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Water resources management

Allocation of Scarce Water Resources Using Deficit Irrigation in Rotational Systems. — S. D. Gorantiwar and I. K. Smout; 129(3), 155-63 (2003).

Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. — S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).

Water shortage

Flow Depletion of Semipervious Streams Due to Pumping. — Sushil K. Singh; 129(6), 449-53 (2003).

Water table

Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. — M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. — Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).

Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. — T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).

Regional Water Management Modeling for Decision Support in Irrigated Agriculture. — Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Watersheds

Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. — Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Weirs

Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. — G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).

Wells

Flow Depletion of Semipervious Streams Due to Pumping. — Sushil K. Singh; 129(6), 449-53 (2003).

Author Index

Abbasi, Fariborz

Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).

Evaluation of Various Surface Irrigation Numerical Simulation Models. —Fariborz Abbasi, Mohammad Mahmodian Shooshtari, and Jan Feyen; 129(3), 208-13 (2003).

Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Adamsen, F. J.

Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Adamsen, Floyd J.

Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).

Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Afshar, Abbas

Optimal Design and Operation of Irrigation Pumping Stations. —Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).

Agassi, M.

Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Ağıralioğlu, Necati

Discussion of "New Algorithm for Hydraulic Calculation in Irrigation Laterals" by Pedro Vallesquino and Pedro L. Luque-Escamilla. —Gürol Yıldırım and Necati Ağıralioğlu; 129(2), 142-3 (2003).

Discussion of "Continuous Outflow Variation Along Irrigation Laterals: Effect of the Number of Outlets" by John D. Valiantzas. —Gürol Yıldırım and Necati Ağıralioğlu; 129(5), 382-6 (2003).

Ahmad, Mobin-ud-Din

Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. — Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Ahmad, Z.

Quasi-Theoretical End-Depth-Discharge Relationship for Rectangular Channels. — Z. Ahmad; 129(2), 138-41 (2003).

Ali, Md. Hazrat

Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. — Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).

Allen, R. G.

Predicting Daily Net Radiation Using Minimum Climatological Data. — S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).

Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).

Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. —S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).

Allen, Richard G.

History and Evaluation of Hargreaves Evapotranspiration Equation. —George H. Hargreaves and Richard G. Allen; 129(1), 53-63 (2003).

Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).

Allison, Stephen

Is the Age of Water Development Over? —Stephen Allison; 129(5), 304 (2003).

Alvarado, Andrés

Night Irrigation Reduction for Water Saving in Medium-Sized Systems. —Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

Anwar, Arif A.

Hydraulically Efficient Power-Law Channels. —Arif A. Anwar and Tonny T. de Vries; 129(1), 18-26 (2003).

Babaeyan-Koopaei, K.

Closure to "Dimensionless Curves for Normal-Depth Calculations in Canal Sections" by K. Babaeyan-Koopaei. — K. Babaeyan-Koopaei; 129(3), 224 (2003).

Barluzzi, Michela

Discussion of "Simple Method for Confined-Aquifer Parameter Estimation" by Sushil K. Singh. — Bruno Brunone, Marco Ferrante, and Michela Barluzzi; 129(3), 219-20 (2003).

Barnes, Edward M.

Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).

Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Bastiaanssen, Wim G. M.

Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. — Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Bautista, E.

General Characteristics of Solutions to the Open-Channel Flow, Feedforward Control Problem. — E. Bautista, T. S. Strelkoff, and A. J. Clemmens; 129(2), 129-37 (2003).

Benyamini, Y.

Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Bosu, S. Santhana

Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. —V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).

Brouwer, R.

Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. —G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).

Brunone, Bruno

Discussion of "Simple Method for Confined-Aquifer Parameter Estimation" by Sushil K. Singh. — Bruno Brunone, Marco Ferrante, and Michela Barluzzi; 129(3), 219-20 (2003).

Célleri, Rolando

Night Irrigation Reduction for Water Saving in Medium-Sized Systems. —Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

Chaurasia, Shri Ram

Direct Equations for Hydraulic Jump Elements in Rectangular Horizontal Channel. —Shri Ram Chaurasia; 129(4), 291-4 (2003).

Cheng, Nian-Sheng

Application of Ergun Equation to Computation of Critical Shear Velocity Subject to Seepage. —Nian-Sheng Cheng; 129(4), 278-83 (2003).

Choi, Christopher Y.
Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Clarke, Thomas R.
Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Clemmens, A. J.
General Characteristics of Solutions to the Open-Channel Flow, Feedforward Control Problem. —E. Bautista, T. S. Strelkoff, and A. J. Clemmens; 129(2), 129-37 (2003).
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Colaizzi, Paul D.
Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. —Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Coon, Giles C.
True Form of Instantaneous Unit Hydrograph of Linear Reservoirs. —Raymond I. Jeng and Giles C. Coon; 129(1), 11-7 (2003).

De Bièvre, Bert
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. —Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

de Graaff, B. J. A.
Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. —G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).

De Troch, François P.
Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. —Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).

de Vries, Tonny T.
Hydraulically Efficient Power-Law Channels. — Arif A. Anwar and Tonny T. de Vries; 129(1), 18-26 (2003).

Dukes, M. D.
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. — M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Elliott, Ronald L.
Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).

El-Sadek, Alaa
Comparative Study of Two Nitrogen Models. — Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Evans, R. O.
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. —M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Faci, J. M.
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. —H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).

Farrell-Poe, K. L.
Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Fenton, John D.
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Ferrante, Marco
Discussion of "Simple Method for Confined-Aquifer Parameter Estimation" by Sushil K. Singh. — Bruno Brunone, Marco Ferrante, and Michela Barluzzi; 129(3), 219-20 (2003).

Feyen, Jan
Comparative Study of Two Nitrogen Models. —Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. —Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).
Evaluation of Various Surface Irrigation Numerical Simulation Models. — Fariborz Abbasi, Mohammad Mahmodian Shooshtari, and Jan Feyen; 129(3), 208-13 (2003).
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Fizik, E.
Method for Normalization of Soil Salinity Data. — V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Ghodsian, Masoud
Flow through Side Sluice Gate. — Masoud Ghodsian; 129(6), 458-63 (2003).

Gilliam, J. W.
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. — M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Goel, Arun
Development of Efficient Stilling Basins for Pipe Outlets. — D. V. S. Verma and Arun Goel; 129(3), 194-200 (2003).

Gorantiwar, S. D.
Allocation of Scarce Water Resources Using Deficit Irrigation in Rotational Systems. —S. D. Gorantiwar and I. K. Smout; 129(3), 155-63 (2003).

Gosain, A. K.
Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).

Gotesman, M.
Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Gutiérrez-Estrada, J. C.
Water Delivery System Planning Considering Irrigation Simultaneity. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Demand Forecasting for Irrigation Water Distribution Systems. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Gyasi-Agyei, Yeboah
Pond Water Source for Irrigation on Steep Slopes. —Yeboah Gyasi-Agyei; 129(3), 184-93 (2003).

Haberland, J.
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. —Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Hargreaves, George H.
History and Evaluation of Hargreaves Evapotranspiration Equation. —George H. Hargreaves and Richard G. Allen; 129(1), 53-63 (2003).
Discussion of "Decision Support System for Estimating Reference Evapotranspiration" by Biju

A. George, B. R. S. Reddy, N. S. Raghuwanshi, and W. W. Wallender. — George H. Hargreaves; 129(5), 381-2 (2003).

Hartani, T.
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. — T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).

Hoogenboom, G.
Predicting Daily Net Radiation Using Minimum Climatological Data. — S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).

Howell, T. A.
Predicting Daily Net Radiation Using Minimum Climatological Data. — S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).

Hunsaker, D. J.
Performance Indices for Surface N Fertigation. — D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Hunsaker, Douglas J.
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Irmak, A.
Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).

Irmak, S.
Predicting Daily Net Radiation Using Minimum Climatological Data. —S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).
Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. —S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).

Itenfisu, Daniel
Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).

Jacobs, J. M.
Predicting Daily Net Radiation Using Minimum Climatological Data. — S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).

Jairaj, P. G.
Modeling Reservoir Irrigation in Uncertain Hydrologic Environment. — P. G. Jairaj and S. Vedula; 129(3), 164-72 (2003).

Jeng, Raymond I.
True Form of Instantaneous Unit Hydrograph of Linear Reservoirs. — Raymond I. Jeng and Giles C. Coon; 129(1), 11-7 (2003).

Jha, Madan K.
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).

Jones, J. W.
Predicting Daily Net Radiation Using Minimum Climatological Data. — S. Irmak, A. Irmak, J. W. Jones, T. A. Howell, J. M. Jacobs, R. G. Allen, and G. Hoogenboom; 129(4), 256-69 (2003).
Solar and Net Radiation-Based Equations to Estimate Reference Evapotranspiration in Humid Climates. — S. Irmak, A. Irmak, R. G. Allen, and J. W. Jones; 129(5), 336-47 (2003).

Kacimov, A. R.
Discussion of "Design of Minimum Seepage-Loss Nonpolygonal Canal Sections" by Prabhata K. Swamee and Deepak Kashyap. —A. R. Kacimov; 129(1), 68-9 (2003).

Kashyap, Deepak
Closure to "Design of Minimum Seepage-Loss Nonpolygonal Canal Sections" by Prabhata K. Swamee and Deepak Kashyap. —Prabhata K. Swamee and Deepak Kashyap; 129(1), 70 (2003).

Khanna, Manoj
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Kostrzewski, Michael
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. —Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Kumar, Ranvir
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. —Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Kunickis, S. H.
Interactive Effects of Controlled Drainage and Riparian Buffers on Shallow Groundwater Quality. —M. D. Dukes, R. O. Evans, J. W. Gilliam, and S. H. Kunickis; 129(2), 82-92 (2003).

Lesaffre, B.
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. — T. Hartani, D. Zimmer, and B. Lesaffre; 129(4), 284-90 (2003).

López-Luque, R.
Water Delivery System Planning Considering Irrigation Simultaneity. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Demand Forecasting for Irrigation Water Distribution Systems. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Luque-Escamilla, Pedro Luis
Closure to "New Algorithm for Hydraulic Calculation in Irrigation Laterals" by Pedro Vallesquino and Pedro L. Luque-Escamilla. — Pedro Vallesquino and Pedro Luis Luque-Escamilla; 129(2), 144-5 (2003).

Mahar, Pooran S.
Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).

Mailhol, Jean-Claude
Validation of a Predictive Form of Horton Infiltration for Simulating Furrow Irrigation. —Jean-Claude Mailhol; 129(6), 412-21 (2003).

Malano, Hector M.
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. —Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Mariño, Miguel A.
Optimal Design and Operation of Irrigation Pumping Stations. —Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).

Marish, S.
Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Massod, Muhammad
Closure to "Deflecting Velocity Rod for Flow Measurements in Small Channels" by Ata-ur-Rehman Tariq and Muhammad Massod. —Ata-ur-Rehman Tariq and Muhammad Massod; 129(1), 68 (2003).

Mirlas, V.
Method for Normalization of Soil Salinity Data. —V. Mirlas, Y. Benyamini, S. Marish, M. Gotesman, E. Fizik, and M. Agassi; 129(1), 64-6 (2003).

Moonasingha, Ananda D
Discussion of "Deflecting Velocity Rod for Flow Measurements in Small Channels" by Ata-ur-Rehman Tariq and Muhammad Masood. —Ananda D Moonasingha; 129(1), 67-8 (2003).

Moradi-Jalal, Mahdi
Optimal Design and Operation of Irrigation Pumping Stations. — Mahdi Moradi-Jalal, Miguel A. Mariño, and Abbas Afshar; 129(3), 149-54 (2003).

Motz, Louis H.
Review of *Water for Agriculture: Irrigation Economics in International Perspective* by Stephen Merrett. — Louis H. Motz; 129(2), 146-7 (2003).

Muslu, Yilmaz
Effect of Lateral Water Surface Profile on Side Weir Discharge. — Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).

Oorts, Katrien
Comparative Study of Two Nitrogen Models. — Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Panda, Sudhindra Nath
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. — B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).

Panigrahi, B.
Optimal Sizing of On-Farm Reservoirs for Supplemental Irrigation. —B. Panigrahi and Sudhindra Nath Panda; 129(2), 117-28 (2003).

Pauwels, Valentijn R. N.
Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. —Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).

Playán, E.
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. —H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Prunty, Lyle
Soil Water Retention and Conductivity When Vapor Flow Is Important. —Lyle Prunty; 129(3), 201-7 (2003).

Pulido-Calvo, I.
Water Delivery System Planning Considering Irrigation Simultaneity. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Demand Forecasting for Irrigation Water Distribution Systems. —I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Radwan, Mona
Comparative Study of Two Nitrogen Models. —Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Ramasastri, K. S.
Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).

Ranganathan, C. R.
Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. —V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).

Ravikumar, V.
Analytical Equation for Variation of Discharge in Drip Irrigation Laterals. — V. Ravikumar, C. R. Ranganathan, and S. Santhana Bosu; 129(4), 295-8 (2003).

Roldán, J.
Water Delivery System Planning Considering Irrigation Simultaneity. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(4), 247-55 (2003).
Demand Forecasting for Irrigation Water Distribution Systems. — I. Pulido-Calvo, J. Roldán, R. López-Luque, and J. C. Gutiérrez-Estrada; 129(6), 422-31 (2003).

Sammels, Leen
Comparative Study of Two Nitrogen Models. — Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Samuel, Manoj P.
Estimation of Aquifer Parameters from Pumping Test Data by Genetic Algorithm Optimization Technique. — Manoj P. Samuel and Madan K. Jha; 129(5), 348-59 (2003).

Sanchez, C. A.
Performance Indices for Surface N Fertigation. —D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Scott, Christopher A.
Mapping Root Zone Soil Moisture Using Remotely Sensed Optical Imagery. —Christopher A. Scott, Wim G. M. Bastiaanssen, and Mobin-ud-Din Ahmad; 129(5), 326-35 (2003).

Shooshtari, Mohammad Mahmodian
Evaluation of Various Surface Irrigation Numerical Simulation Models. —Fariborz Abbasi, Mohammad Mahmodian Shooshtari, and Jan Feyen; 129(3), 208-13 (2003).

Shouse, Peter
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

Shui, Lee Teang
Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. —Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).

Simunek, Jirka
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).

Singh, Joginder
Regional Water Management Modeling for Decision Support in Irrigated Agriculture. — Ranvir Kumar and Joginder Singh; 129(6), 432-9 (2003).

Singh, Rajesh P.
Computing Inlet Pressure Head of Multioutlet Pipeline. — Pooran S. Mahar and Rajesh P. Singh; 129(6), 464-8 (2003).

Singh, Sushil K.
Closure to "Simple Method for Confined-Aquifer Parameter Estimation" by Sushil K. Singh. — Sushil K. Singh; 129(3), 220-3 (2003).
Flow Depletion of Semipervious Streams Due to Pumping. — Sushil K. Singh; 129(6), 449-53 (2003).

Smout, I. K.
Allocation of Scarce Water Resources Using Deficit Irrigation in Rotational Systems. — S. D. Gorantiwar and I. K. Smout; 129(3), 155-63 (2003).

Sonnen, Michael B.
Discussion of "Dimensionless Curves for Normal-Depth Calculations in Canal Sections" by K. Babaeyan-Koopaei. — Michael B. Sonnen; 129(3), 223-4 (2003).

Sourell, H.
Performance of Rotating Spray Plate Sprinklers in Indoor Experiments. —H. Sourell, J. M. Faci, and E. Playán; 129(5), 376-80 (2003).

Spaan, G. B. H.
Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. —G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).

Standley, Laurel J.
Review of *Improving Irrigation Governance and Management in Nepal* by G. P. Shivakoti and E. Ostrom, Eds. —Laurel J. Standley; 129(3), 225 (2003).

Stankovic, Miomir
Forecasting of Reference Evapotranspiration by Artificial Neural Networks. —Slavisa Trajkovic, Branimir Todorovic, and Miomir Stankovic; 129(6), 454-7 (2003).

Strelkoff, T. S.
General Characteristics of Solutions to the Open-Channel Flow, Feedforward Control Problem. —E. Bautista, T. S. Strelkoff, and A. J. Clemmens; 129(2), 129-37 (2003).
Field Verification of Two-Dimensional Surface Irrigation Model. —A. J. Clemmens, T. S. Strelkoff, and E. Playán; 129(6), 402-11 (2003).

Strelkoff, Theodor S.
Two-Dimensional Basin Flow with Irregular Bottom Configuration. —Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).

Strelkoff, Theodore S.
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. —Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).

Sudheer, K. P.
Estimating Actual Evapotranspiration from Limited Climatic Data Using Neural Computing Technique. — K. P. Sudheer, A. K. Gosain, and K. S. Ramasastri; 129(3), 214-8 (2003).

Swamee, Prabhata K.
Closure to "Design of Minimum Seepage-Loss Nonpolygonal Canal Sections" by Prabhata K. Swamee and Deepak Kashyap. — Prabhata K. Swamee and Deepak Kashyap; 129(1), 70 (2003).

Tamimi, Akrum H.
Two-Dimensional Basin Flow with Irregular Bottom Configuration. — Theodor S. Strelkoff, Akrum H. Tamimi, and A. J. Clemmens; 129(6), 391-401 (2003).

Tariq, Ata-ur-Rehman
Closure to "Deflecting Velocity Rod for Flow Measurements in Small Channels" by Ata-ur-Rehman Tariq and Muhammad Massod. — Ata-ur-Rehman Tariq and Muhammad Massod; 129(1), 68 (2003).

Teloglou, I. S.
Discussion of "Interaction of Stream and Sloping Aquifer Receiving Constant Recharge" by A. Upadhyaya and H. S. Chauhan. — T. S. Zissis and I. S. Teloglou; 129(4), 299-301 (2003).

Timbe, Luis
Night Irrigation Reduction for Water Saving in Medium-Sized Systems. — Bert De Bièvre, Andrés Alvarado, Luis Timbe, Rolando Célleri, and Jan Feyen; 129(2), 108-16 (2003).

Timmerman, Anthony
Comparative Study of Two Nitrogen Models. — Alaa El-Sadek, Katrien Oorts, Leen Sammels, Anthony Timmerman, Mona Radwan, and Jan Feyen; 129(1), 44-52 (2003).

Todorovic, Branimir
Forecasting of Reference Evapotranspiration by Artificial Neural Networks. — Slavisa Trajkovic, Branimir Todorovic, and Miomir Stankovic; 129(6), 454-7 (2003).

Tozluk, Hasan
Effect of Lateral Water Surface Profile on Side Weir Discharge. — Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).

Trajkovic, Slavisa
Forecasting of Reference Evapotranspiration by Artificial Neural Networks. — Slavisa Trajkovic, Branimir Todorovic, and Miomir Stankovic; 129(6), 454-7 (2003).

Turral, Hugh
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. I: Rectangular Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 305-16 (2003).
Two-Dimensional Simulation Model for Contour Basin Layouts in Southeast Australia. II: Irregular Shape and Multiple Basins. — Manoj Khanna, Hector M. Malano, John D. Fenton, and Hugh Turral; 129(5), 317-25 (2003).

Valiantzas, John D.
Inlet Pressure, Energy Cost, and Economic Design of Tapered Irrigation Submains. — John D. Valiantzas; 129(2), 100-7 (2003).
Explicit Hydraulic Design of Microirrigation Submain Units with Tapered Manifold and Laterals. — John D. Valiantzas; 129(4), 227-36 (2003).
Closure to "Continues Outflow Variation along Irrigation Laterals: Effect of the Number of Outlets" by John D. Valiantzas. — John D. Valiantzas; 129(5), 386-90 (2003).

Vallesquino, Pedro
Closure to "New Algorithm for Hydraulic Calculation in Irrigation Laterals" by Pedro Vallesquino and Pedro L. Luque-Escamilla. — Pedro Vallesquino and Pedro Luis Luque-Escamilla; 129(2), 144-5 (2003).

van Genuchten, M. Th.
Overland Water Flow and Solute Transport: Model Development and Field-Data Analysis. — Fariborz Abbasi, Jirka Simunek, M. Th. van Genuchten, Jan Feyen, Floyd J. Adamsen, Douglas J. Hunsaker, Theodore S. Strelkoff, and Peter Shouse; 129(2), 71-81 (2003).
Effects of Flow Depth on Water Flow and Solute Transport in Furrow Irrigation: Field Data Analysis. — Fariborz Abbasi, Floyd J. Adamsen, Douglas J. Hunsaker, Jan Feyen, Peter Shouse, and M. Th. van Genuchten; 129(4), 237-46 (2003).

van Nooyen, R. R. P.
Discharge Formulas of Crump-De Gruyter Gate-Weir for Computer Simulation. — G. B. H. Spaan, R. R. P. van Nooyen, B. J. A. de Graaff, and R. Brouwer; 129(4), 270-7 (2003).

Vedula, S.
Modeling Reservoir Irrigation in Uncertain Hydrologic Environment. — P. G. Jairaj and S. Vedula; 129(3), 164-72 (2003).

Verhoest, Niko E. C.
Water Table Profiles and Discharges for an Inclined Ditch-Drained Aquifer under Temporally Variable Recharge. — Valentijn R. N. Pauwels, Niko E. C. Verhoest, and François P. De Troch; 129(2), 93-9 (2003).

Verma, D. V. S.
Development of Efficient Stilling Basins for Pipe Outlets. — D. V. S. Verma and Arun Goel; 129(3), 194-200 (2003).

Walker, W. R.
Optimal Water Management for Reservoir Based Irrigation Projects Using Geographic Information System. — Md. Hazrat Ali, Lee Teang Shui, and W. R. Walker; 129(1), 1-10 (2003).

Waller, Peter M.
Estimating Soil Moisture Under Low Frequency Surface Irrigation Using Crop Water Stress Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, and Peter M. Waller; 129(1), 27-35 (2003).
Water Stress Detection Under High Frequency Sprinkler Irrigation with Water Deficit Index. — Paul D. Colaizzi, Edward M. Barnes, Thomas R. Clarke, Christopher Y. Choi, Peter M. Waller, J. Haberland, and Michael Kostrzewski; 129(1), 36-43 (2003).

Walter, Ivan A.
Comparison of Reference Evapotranspiration Calculations as Part of the ASCE Standardization Effort. — Daniel Itenfisu, Ronald L. Elliott, Richard G. Allen, and Ivan A. Walter; 129(6), 440-8 (2003).

Whitty, E. B.
Daily Grass and Alfalfa-Reference Evapotranspiration Estimates and Alfalfa-to-Grass Evapotranspiration Ratios in Florida. — S. Irmak, R. G. Allen, and E. B. Whitty; 129(5), 360-70 (2003).

Yıldırım, Gürol
Discussion of "New Algorithm for Hydraulic Calculation in Irrigation Laterals" by Pedro Vallesquino and Pedro L. Luque-Escamilla. — Gürol Yıldırım and Necati Ağıralioğlu; 129(2), 142-3 (2003).
Discussion of "Continuous Outflow Variation Along Irrigation Laterals: Effect of the Number of Outlets" by John D. Valiantzas. — Gürol Yıldırım and Necati Ağıralioğlu; 129(5), 382-6 (2003).

Yüksel, Ebubekir
Effect of Lateral Water Surface Profile on Side Weir Discharge. — Yilmaz Muslu, Hasan Tozluk, and Ebubekir Yüksel; 129(5), 371-5 (2003).

Zerihun, D.
Performance Indices for Surface N Fertigation. — D. Zerihun, C. A. Sanchez, K. L. Farrell-Poe, F. J. Adamsen, and D. J. Hunsaker; 129(3), 173-83 (2003).

Zimmer , D.
Drainage of Sloping Lands with Variable Recharge Model Validation and Applications. — T. Hartani, D. Zimmer , and B. Lesaffre; 129(4), 284-90 (2003).

Zissis, T. S.
Discussion of "Interaction of Stream and Sloping Aquifer Receiving Constant Recharge" by A. Upadhyaya and H. S. Chauhan. — T. S. Zissis and I. S. Teloglou; 129(4), 299-301 (2003).